REMARKS

Claims 68-82 are pending in the present application. Claim 72 has been deleted and claims 68-82 have been amended herein. Upon entry of the present Amendment, claims 68-71 and 73-82 will remain pending.

As a preliminary matter, although Applicants did not receive a copy of "Attachment for PTO-948" outlining changes for prosecution of applications containing drawings, new formal drawings have, in fact, been filed on date even herewith under separate cover to the Draftsperson.

I. The Claimed Invention Is Sufficiently Described

Claims 68-82 stand rejected under 35 U.S.C. § 112, first paragraph as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Applicants request reconsideration because the claimed invention is sufficiently described in the specification.

The Office Action asserts that the specification does not teach that any system described therein is "integrated." Although Applicants maintain that the specification and drawings, as a whole, clearly convey that the systems of associated components described therein are integrated, solely to advance prosecution of the present application, the claims have been amended to delete the term "integrated."

The Office Action asserts that claim 68 does not recite that the virtual library is chosen by "defined criteria" and that the system requires "particular members" to possess at least one property but that the computer virtual library is not so limited. Thus, the Office Action asserts that this broadening of the *in silico* practice is new matter. Although Applicants maintain that no new matter has been introduced into claim 68, solely to advance prosecution of the present application, claim 68 has been amended to recite that the computer network reduces the members of said virtual library of oligonucleotides by one or more of i) a process of selection based on target accessibility to the selected nucleic acid, ii) a process of selection based on uniform distribution of oligonucleotide compounds across the selected nucleic acid, or iii) a process of selection based on targeting a

functional region of the selected nucleic acid (*i.e.*, defined criteria). Support can be found at, for example, subsections 5, 6 and 7 of the specification. Further, it is the apparatus that accepts the set of real oligonucleotides and performs at least one procedure for each of the real oligonucleotides wherein the procedure identifies particular members of the set that possesses at least one property, as recited in claim 68. Thus, the computer network that prepares the virtual library of oligonucleotides presents no new matter.

The Office Action also asserts that while the specification discloses that only those oligonucleotides having particular desired properties are selected and then synthesized, the generic synthesis step is not so limited and, thus, constitutes new matter. Although Applicants maintain that no new matter has been introduced into claim 68, solely to advance prosecution of the present application, claim 68 has been amended to recite that an automated synthesizer that receives the synthesis instructions from the computer network and synthesizes a set of real oligonucleotides corresponding to the virtual set of oligonucleotides "having reduced members." Support for which can be found at, for example, page 8, lines 10-16 of the specification as recognized by the Examiner.

The Office Action also asserts that the phrase "real-time" describing the polymerase chain reaction is not found in Applicants' specification and is, thus, new matter. Applicants have amended the claims to delete "real-time."

Thus, in view of the amended claims, Applicants maintain that the claimed invention finds ample written description throughout the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 112, first paragraph be withdrawn.

II. The Claims Are Clear And Definite

Claims 68-82 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention. The Office Action asserts that the term "assay" is vague and indefinite as it refers to polymerase chain reaction. Although Applicants believe the claims are clear

and definite as drafted, solely to advance prosecution of the present application, Applicants have amended the claims to be even more clear and definite by either deleting "assay" or replacing "assay" with "procedure." PCR is clearly a procedure and one skilled in the art would readily recognize it as a procedure. No new matter has been added.

Persons of ordinary skill would have no difficulty in determining whether a given "procedure" meets the criteria recited in the claims. Accordingly, the claims are definite within the meaning of § 112. *In re Mercier*, 185 U.S.P.Q. 774 (C.C.P.A. 1975) (claims sufficiently define an invention so long as one skilled in the art can determine what subject matter is or is not within the scope of the claims). Thus, the claims are clear and definite. Accordingly, Applicants respectfully request that the rejection of the claims under 35 U.S.C. § 112, second paragraph be withdrawn.

III. Conclusion

In view of the foregoing, Applicants respectfully submit that the claims are in condition for allowance. An early notice of the same is earnestly solicited. The Examiner is invited to contact Applicants' undersigned representative at (215) 564-8906 if there are any questions regarding Applicants' claimed invention. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

Respectfully submitted,

Paul K. Legaard
Registration No. **38,534**

Date: **October 17, 2001**

WOODCOCK WASHBURN LLP
One Liberty Place - 46th Floor
Philadelphia, PA 19103
Telephone: (215) 568-3100
Facsimile: (215) 568-3439

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claim 72 has been cancelled.

Claims 68-71 and 73-82 have been amended as follows:

68. (Amended) [An integrated] A system of associated components for preparing a set of oligonucleotides [targeted to a selected nucleic acid and identifying particular members of said set] that possess at least one property [, said system] comprising:

a computer network that prepares a virtual library of oligonucleotides targeted to [said] a selected nucleic acid and generates synthesis instructions in computer manipulable form for each of said oligonucleotides in said virtual library, wherein said computer network reduces the members of said virtual library of oligonucleotides by one or more of i) a process of selection based on target accessibility to said selected nucleic acid, ii) a process of selection based on uniform distribution of oligonucleotide compounds across said selected nucleic acid, or iii) a process of selection based on targeting a functional region of said selected nucleic acid;

an automated synthesizer that receives said synthesis instructions from said computer network and synthesizes a set of real oligonucleotides corresponding to said virtual set of oligonucleotides having reduced members; and

an [assay] apparatus that accepts said set of real oligonucleotides and performs at least one [assay] procedure for each of said real oligonucleotides wherein said [assay] procedure identifies particular members of said set possessing said at least one property, wherein said [assay] procedure is computer-controlled [real-time] polymerase chain reaction or computer-controlled enzyme-linked immunosorbent assay.

69. (Amended) The [integrated] system of claim 68 wherein said computer network comprises a computer engine, database server, and file server.

70. (Amended) The [integrated] system of claim 68 wherein the steps of preparing a set of real oligonucleotides and performing at least one [assay] procedure are performed robotically.

71. (Amended) The [integrated] system of claim 68 wherein each of said at least one property is a physical, chemical or biological property.

73. (Amended) The [integrated] system of claim [72] 68 wherein said computer network reduces the members of said virtual library of oligonucleotides by a process of selection based on a uniform distribution of oligonucleotide compounds across said selected nucleic acid.

74. (Amended) The [integrated] system of claim [72] 68 wherein said computer network reduces the members of said virtual library of oligonucleotides by a process of selection based on targeting a functional region of said selected nucleic acid.

75. (Amended) The [integrated] system of claim 74 wherein said functional region is the transcription start site, 5' cap, start codon, 5'UTR, 3'UTR, stop codon, 5' splice site or polyadenylation site.

76. (Amended) The [integrated] system of claim 68 wherein said computer network applies selected chemical modifications to said virtual oligonucleotide compounds to generate chemically modified virtual oligonucleotides.

77. (Amended) The [integrated] system of claim 68 wherein said selected nucleic acid is genomic DNA, cDNA, polymerase chain reaction product, expressed sequence tag, mRNA or structural RNA.

78. (Amended) The [integrated] system of claim 68 wherein said selected nucleic acid is a human nucleic acid.

79. (Amended) The [integrated] system of claim 68 further comprising a second [assay] apparatus selected from the group consisting of liquid chromatography, optical density reader, mass spectroscopy, gel fluorescence and scintillation imaging, and capillary gel electrophoresis.

80. (Amended) The [integrated] system of claim 68 wherein said property is modulating said selected nucleic acid.

81. (Amended) The [integrated] system of claim 68 wherein said computer network searches at least one database for nucleic acids homologous to said selected nucleic acid.

82. (Amended) The [integrated] system of claim 68 wherein said computer network searches at least one database for alternative transcripts.